WE CLAIM:

1. A method for fabricating microstructures, said method having the following steps: providing a substrate having a patterning layer, forming a regular arrangement of closed cavities in the patterning layer with adjacent cavities being separated from one another by partitions, opening selected cavities in which microstructures are intended to be produced; removing at least a portion of the partitions situated between adjacent opened cavities in order to form trenches extending over at least two cavities; and introducing a material into the trenches in order to fabricate the microstructures.

2. A method according to claim 1, wherein the step of forming closed cavities includes forming depressions in the patterning layer, and then closing the depressions with a covering layer to produce the closed cavities.

3. A method according to claim 2, wherein the step of providing the patterning layer includes successively applying at least a first and second layer of material on a substrate, the materials of the first and second layers being chosen so as to enable a depositing of a material of a covering layer on the second layer selectively with respect to the first layer to form the closed cavities, the depressions being formed in the first and second layer, the depressions penetrating through the second layer completely and penetrating through the first layer at least partially and, afterwards, the material of the covering layer being deposited in such a way that it grows essentially only on the second layer.

4. A method according to claim 3, wherein the step of forming the patterning layer includes applying a third layer onto the second layer, the material of said third layer being different than the second layer, so that the material of the covering layer essentially grows only on the second layer.

5. A method according to claim 3, wherein the material of the covering layer is polished back as far as the outermost layer, with the outermost layer acting as a polishing stop.

6. A method according to claim 3, wherein a third layer is applied onto the second layer and the first, second and third layers are dielectric layers.

7. A method according to claim 6, wherein the material of the first and third layers is a silicon nitride and the material of the second layer is a silane-based silicon oxide deposited in a plasma-enhanced fashion and the material of the covering layer is an oxide fabricated by means of a O_3/TEOS deposition.

8. A method according to claim 3, wherein the first layer is about four to five times thicker than the second layer.

9. A method according to claim 1, wherein the step of forming the closed cavities includes providing a lithographic pattern and subsequently etching cavities into the patterned layer.

10. A method according to claim 9, wherein the step of forming a lithographic pattern includes forming a resist mask utilizing two regular strip patterns rotated through a predetermined angle relative to one another and being successively imaged into said resist mask.

11. A method according to claim 10, wherein the predetermined angle is 90°.

12. A method according to claim 1, wherein, in addition to forming trenches, individually opened cavities are also formed and said step of producing materials includes introducing materials into the trenches and the individually opened cavities to form said microstructure.

13. A method according to claim 1, wherein the step of opening the cavities in order to remove the partitions includes providing a mask to the covering layer.

14. A method according to claim 1, wherein the material of the microstructure to be formed is introduced into the opened cavities and protruding material is polished back.

15. A method according to claim 1, wherein the material of the microstructures to be formed is selected from a group consisting of metal, metal alloys and copper.

16. A method according to claim 1, wherein the microstructures to be fabricated are interconnects.

17. An arrangement of microstructures having a patterned layer in which a multiplicity of closed cavities and a multiplicity of microstructures are arranged, the closed cavities being presented in a grid point of a predetermined raster and the microstructures running along the connecting lines that connect the grid points, the closed cavities having a given lateral extent in at least one direction and the lateral extent of the microstructure in this direction corresponds to at last twice the lateral extent of the cavities.

18. An arrangement according to claim 17, wherein partitions of individual thicknesses are arranged between adjacent cavities and between cavities in microstructures adjacent thereto.

19. An arrangement according to claim 17, wherein grid points have a distance D, the lateral extent of the closed cavities is B and the lateral extent of the microstructure is $n \bullet D + B$, wherein n is a natural number.

20. An arrangement according to claim 17, wherein the patterned layer comprises at least first and second layers made of different materials, said second layer lying on said first layer, and the cavities run at least in the first layer and the microstructures run at least in both layers.

21. An arrangement according to claim 20, wherein the material of the first layer is a silicon nitride and the material of the second layer is a silicon oxide.

22. An arrangement according to claim 20, wherein the cavities are closed with a covering layer grown selectively on the material of the second layer.

23. An arrangement according to claim 17, wherein the microstructures are interconnects.

24. An arrangement according to claim 17, wherein the microstructures are of a material selected from a group consisting of metal, metal alloys and copper.